

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 July 2002 (25.07.2002)

PCT

(10) International Publication Number
WO 02/057036 A2

(51) International Patent Classification⁷: **B22F 3/11**

(21) International Application Number: **PCT/CA02/00073**

(22) International Filing Date: 16 January 2002 (16.01.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/261,218 16 January 2001 (16.01.2001) US
2,332,674 29 January 2001 (29.01.2001) CA
2,344,088 12 April 2001 (12.04.2001) CA

(71) Applicant (for all designated States except US): **AGS TARON INVESTMENTS INC.** [CA/CA]; 1405 Transcanada, Suite 410, Dorval, Quebec H9P 2V9 (CA).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

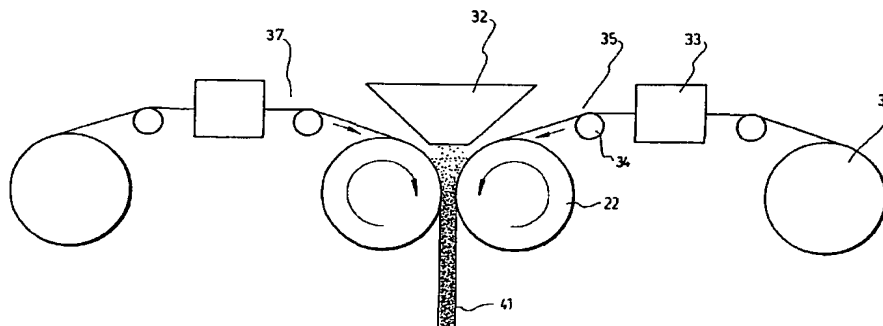
— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(72) Inventor; and
(75) Inventor/Applicant (for US only): **VATCHIANTS, Serge** [CA/CA]; 16 Senneville Road, Senneville, Quebec H9X 1B6 (CA).

(74) Agent: **ROBIC**; 55, St-Jacques, Montréal, Quebec H2Y 3X2 (CA).

(54) Title: **A METHOD FOR THE PRODUCTION OF METAL FOAM OR METAL-COMPOSITE BODIES WITH IMPROVED IMPACT, THERMAL AND SOUND ABSORPTION PROPERTIES**



(57) Abstract: A method for the production of foamable or foamed metal pellets, parts and panels. The method comprises the steps of: i) providing a mixture of a metal alloy powder with a foaming agent powder, ii) pre-compacting the mixture of step i); iii) heating the pre-compacted mixture of step ii) to a temperature below a decomposition temperature of the foaming and at which permanent bonding of the particles occurs v) hot compacting the body for producing a compacted body made of a metal matrix embedding the foaming agent; and vi) reducing the compacted body into metal fragments and thereby obtaining dense foamable metal chips. A method for the production of a foam metal using a closed volume metal shell is also disclosed. The method comprises the steps of: a) providing metal pieces and reducing said metal pieces into smaller metal particles; b) mixing the metal particles with an additive having a decomposition temperature that is greater than a solidus temperature of said metal particles; c) pouring the mixture of step b) into a closed volume metal shell having a given thickness and providing the metal shell with at least one passage for gases to escape; d) reducing the thickness of the metal shell by applying pressure; e) heating the metal shell to a temperature above said solidus temperature of the metal particles and below said decomposition temperature of the additive, and immediately applying pressure on the metal shell sufficient to compress the metal particles and to create micro shear conditions between the metal particles so as to obtain a dense metal product.

WO 02/057036 A2